

WHAT IS CLAIMED IS:

1. A composite micro-structured sheet for diffusing and condensing light comprising a substrate having a top surface and a bottom surface, wherein a plurality of straight trenches with an arc cross-section or
5 a micro-lens array is formed on the bottom surface for diffusing the incident light on the bottom surface, and a plurality of rhombus protrusions is formed on the top surface for raising the semi-brightness angle of the light that has passed through the bottom surface.
2. The composite micro-structured sheet as claimed in claim 1,
10 wherein the substrate is made of polymethyl methacrylate (PMMA) or polycarbonate (PC).
3. The composite micro-structured sheet as claimed in claim 1, wherein each straight trench with an arc cross-section is constructed of a convex pillar lens array or a concave pillar lens array.
- 15 4. The composite micro-structured sheet as claimed in claim 1, wherein the micro-lens array is composed of a convex lens array or a concave lens array.
5. The composite micro-structured sheet as claimed in claim 3, wherein the size and focal length of the lenses of the convex pillar lens array
20 or the concave pillar lens array are all the same.
6. The composite micro-structured sheet as claimed in claim 4, wherein the spaces between the lenses of the convex lens array or the concave lens array are different.
7. The composite micro-structured sheet as claimed in claim 1,

wherein the rhombus protrusions are parallel to each other.

8. The composite micro-structured sheet as claimed in claim 1,
wherein an included angle between each straight trench with an arc
cross-section and the respective rhombus protrusion ranges from 0 to 90
5 degrees.